

NAVAL POSTGRADUATE SCHOOL
Department of Electrical and Computer Engineering

Checklist for MSEE Degree

Officer name: _____

Month/year enrolled: _____

I certify that the information contained on this form is correct.

Officer-student

We certify that this student has met the minimum requirements for the MSEE degree.

Signatures:

Academic Associate

ECE Assoc. Chairman for Students

Curriculum Officer

ECE Chairman

Date

Effective date: April 1996

1. BSEE Degree/Equivalence requirement satisfied by (fill in one):

- BSEE degree from _____ Month/year: _____
- BSEE equivalence from NPS. Date: _____

2. Thesis credits (16 minimum): _____

Title: _____

Advisor: _____

Presentation date: _____ Where? (ECE Seminar?) _____

The remaining requirements must be met exclusive of thesis requirements.

3. Required courses in one option (circle the courses taken in your option):

Communications Systems

EC 3500	Analysis of Random Signals	(4-0)
EC 3510	Communications Engineering	(3-1)
EC 4550	Digital Communications	(4-0)

At least one of:

EC 3550	Fiber Optic Systems	(3-1)
EC 4500	Advanced Topics in Communications	(3-0)
EC 4570	Decision and Estimation Theory	(4-0)

At least one of:

EC 4560	Communications ECCM	(3-2)
EC 4580	Coding and Information Theory	(4-0)

Computer Systems

Any three of:

EC 3800	Microprocessor-based System Design	(3-2)
EC 3820	Computer Systems	(3-1)
EC 3830	Digital Design Methodology	(3-2)
EC 3840	Introduction to Computer Architectures	(3-2)

At least two of:

EC 4800	Advanced Topics in Computer Engineering	(3-0)
EC 4810	Fault Tolerant Computing	(3-2)
EC 4820	Advanced Computer Architectures	(3-1)
EC 4830	Digital Computer Design	(3-1)
EC 4840	Advanced Microprocessors	(3-1)
EC 4850	High Speed Networking	(3-2)
EC 4870	VLSI Systems Design	(3-2)

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Electromagnetic Systems

EC 3600	Electromagnetic Radiation, Scattering, and Propagation	(3-2)
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At least one of:

EC 3210	Introduction to Electro-optical Engineering	(3-1)
EC 3610	Microwave Engineering	(3-2)
EC 3630	Radiowave Propagation	(3-0)
EC 3650	Computational Electromagnetic Modeling Techniques	(4-1)

At least two of:

EC 4210	Electro-optic Systems Engineering	(3-0)
EC 4600	Advanced Topics in Electromagnetics	(3-0)
EC 4610/4620	Radar Systems	(3-2)
EC 4630	Radar Cross Section Prediction and Reduction	(3-0)
EC 4650	Advanced Electromagnetics	(3-0)
EC 4660	Electromagnetic Environmental Effects on Communication System Performance	(3-2)
EC 4680/4690	Radar Electronic Warfare Techniques and Systems	(3-3)

Guidance, Control, and Navigation Systems

EC 3310	Optimal Estimation	(3-2)
EC 3320	Optimal Control Systems	(3-2)
EC 4350	Nonlinear Systems	(3-2)

At least two of:

EC 4300	Advanced Topics in Control Systems	(3-0)
EC 4320	Design of Robust Control Systems	(3-2)
EC 4330/4340	Navigation, Missile, and Avionics Systems	(3-2)
EC 4360	Adaptive Control Systems	(3-2)

Power Systems

EC 3130	Electrical Machinery Theory	(4-2)
EC 3150	Solid State Power Conversion	(3-2)
EC 4130	Advanced Electrical Machinery Systems	(4-2)
EC 4150	Advanced Solid State Power Conversion	(4-1)

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Joint Services Electronic Warfare

EC 3700 Introduction to Joint Services Electronic Warfare (3-2)

At least four of:

EC 3310 Optimal Estimation (3-2)

EC 4210 Electro-Optic Systems Engineering (3-0)

EC 4330/4340 Navigation, Missile, and Avionics Systems (3-2)

EC 4560 Communications ECCM (3-2)

EC 4610/4620 Radar Systems (3-2)

EC 4630 Radar Cross Section Prediction and Reduction (3-0)

EC 4680/4690 Radar Electronic Warfare Techniques and Systems (3-3)

EC 4700 Advanced Topics in Electronic Warfare (3-0)

SS 3001 Military Applications of Space (3-2)

Signal Processing Systems

EC 3400 Digital Signal Processing (3-1)

EC 3410 Discrete-Time Random Signals (4-0)

EC 3420 Statistical Digital Signal Processing (3-1)

At least two of:

EC 4400 Advanced Topics in Signal Processing (3-0)

EC 4410 Speech Signal Processing (3-1)

EC 4420 Modern Spectral Analysis (3-1)

EC 4450 Sonar Systems Engineering (4-1)

EC 4460 Artificial Neural Networks (3-1)

EC 4470 Adaptive Signal Processing (3-1)

EC 4480 Image Processing and Recognition (3-2)

EC 4490 Ocean Acoustic Tomography (3-0)

Signals Intelligence

EC 3850 Computer Communications Methods (3-1)

EC 3750 SIGINT Systems I (3-2)

Three required courses in ONE of the following sub-options:

Communications Engineering:

EC 3500 Analysis of Random Signals (4-0)

EC 3510 Communications Engineering (3-1)

EC 4550 Digital Communications (4-0)

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or

Signal Processing Systems:

EC 3400	Digital Signal Processing	(3-1)
EC 3410	Discrete-Time Random Signals	(4-0)
EC 4570	Decision and Estimation Theory	(4-0)

or

Joint Services Electronic Warfare:

EC 3600	Electromagnetic Radiation, Scattering, and Propagation	(3-2)
EC 4610	Radar Systems	(3-2)
EC 4680	Radar Electronic Warfare Techniques and Systems	(3-3)

Three courses from either of the sub-options not picked or from the following list:

(This satisfies the requirement for two out-of-option courses)

EC 3210	Introduction to Electro-Optical Engineering	(3-1)
EC 3310	Optimal Estimation	(3-2)
EC 3420	Statistical Digital Signal Processing	(3-1)
EC 3550	Fiber Optic Systems Fundamentals	(3-1)
EC 3610	Microwave Engineering	(3-2)
EC 3630	Radiowave Propagation	(3-0)
EC 3800	Microprocessor Based System Design	(3-2)
EC 3840	Introduction to Computer Architectures	(3-2)
EC 4420	Modern Spectral Analysis	(3-1)
EC 4560	Communications ECCM	(3-2)
EC 4580	Information Theory	(4-0)
EC 4590	Communications Satellite Systems Engineering	(3-1)
EC 4700	Advanced Topics in Information Warfare	(3-0)
EC 4750	SIGINT Systems II	(3-2)

One of the following graduate courses in Mathematics:

MA 3046	Matrix Analysis	(4-1)
MA 4362	Orbital Mechanics	(3-0)
MA 4570	Cryptography	(4-0)

4. At least two graded EC courses outside of the option (not required for the Signals Intelligence option):

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5. Course credit requirements (list all graduate courses taken):

<u>3000-level courses</u>	<u>Credits</u>	<u>4000-level courses</u>	<u>Credits</u>
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Total graduate credits in approved engineering, mathematics, physical science, and/or computer science (36 minimum at 3xxx and 4xxx-level): _____

Total credits in ECE 3xxx and 4xxx courses (24 graded credits): _____

Total credits at 4000 level (12 minimum, 4 courses minimum, at least three of which must be graded): _____

6. At least 3 credits in a graduate course in mathematics:

MA _____ Credits: _____

Elective Courses (courses not appearing in any option)

EC 3200 Advanced Electronics Engineering (3-2)
EC 3230 Space Power and Radiation Effects (3-1)
EC 3450 Fundamentals of Ocean Acoustics (4-0)
EC 4000 Future Engineering Practice (3-0)
EC 4010 Defense Systems Engineering (3-2)
EC 4220 Introduction to Analog VLSI (3-1)

Selected Mathematics Courses (all others require approval of the Academic Associate)

MA 3030 Introduction to Combinatorics and its Applications (4-1)
MA 3046 Matrix Theory and Computational Linear Algebra (4-1)
MA 3132 Partial Differential Equations and Integral Transforms (4-0)
MA 3232 Numerical Analysis (4-1)
MA 3400 Mathematical Modeling Processes (4-0)
MA 3675/ Theory of Functions of a Complex Variable I & II (3-0)
MA 3676

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